## ABSTRACT

The invention provides a method for measurement of high temperatures of a process stream by means of a thermocouple arranged in a thermowell, wherein the thermowell is at least partly covered by a layer of a catalytic material being active in at least one endothermic reaction.

The thermowell is installed in a reactor by inserting the thermowell through a hole penetrating the reactor wall so that the tip of the thermowell is in contact with the process stream.

The invention is typically used where the reaction is a reforming reaction and the reactor is an autothermal reformer fed with a hydrocarbon stream and an oxygen containing stream.